

### REMARKS

Claims 1-5, 7-14, and 16-25 remain for consideration. Claim 10 is amended to correct a typographical error. All claims are thought to be allowable over the cited art.

The Office Action fails to establish that claim 18 is anticipated under 35 U.S.C. §102(b) by U.S. Patent No. 3,939,437 to Adam.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the claim. (See M.P.E.P. § 2131). In particular, every element of Applicant's claim 18 must be shown to exist within Adam, where Applicant's claim 18 at least sets forth "a printed circuit board," "a first device," and "an amplifier having an input and an output, wherein ... the amplifier is coupled to [an] input of the first device via the printed circuit board."

The Office Action, however, fails to show that Adam teaches a printed circuit board as the medium to be used to interconnect amplifier 18 to device 14 as is required by Applicant's claim 18. The Office Action cites Adam's abstract for the source of the purported teaching, however, it seems that Adam's abstract is completely silent as to the teaching of the use of a printed circuit board generally, and more particularly, Adam's abstract seems to be silent as to a specific teaching of the use of a printed circuit board to provide the connection medium between amplifier 18 and device 14.

Furthermore, the Office Action has identified certain claim language of Adam's claim 2 as teaching elements of Applicant's claim 18. It is respectfully submitted that the claim language of Adam, as cited by the Office Action in col. 4, lines 31-34 of Adam, is not sufficiently clear to consider as to the alleged specific teaching. Applicant respectfully submits, therefore, that Applicant's claim 18 patentably distinguishes over Adam and is in condition for allowance.

The Office Action fails to establish that claims 1 and 10 are unpatentable over U.S. Patent No. 3,763,437 to Seidel in view of U.S. Patent No. 5,493,246 to Anderson under 35 U.S.C. § 103(a).

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references

themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. (See MPEP § 2142).

Concerning the third criteria which must be met to establish *prima facie* obviousness of a claimed invention, the combination of Seidel with Anderson must be shown to teach or suggest all of Applicant's claimed limitations. In regard to Applicant's claim 1, however, the Office Action fails to make such a showing. The Office Action, for example, suggests that Seidel's parallel wave paths 10 and 11 correspond to the "feed forward circuit" of Applicant's claim 1 and that Seidel's amplifier 28 corresponds to the "amplifier" of Applicant's claim 1. Applicant's claim 1, however, requires that the "feed-forward circuit [be connected] in parallel with said amplifier." While Seidel apparently teaches that parallel wave paths 10 and 11 are themselves connected in parallel, Seidel appears to be silent as to the parallel wave paths 10 and 11 further being connected in parallel with Seidel's amplifier 28, which is in contradistinction to Applicant's claim 1. Rather, it seems that Seidel's parallel wave paths 10 and 11 are instead connected in series with amplifier 28, since Seidel's parallel wave paths 10 and 11 seem to be coupled entirely at the output of amplifier 28. (See FIG. 2).

Furthermore, the Office Action admits that Seidel is silent as to a "feed forward circuit [comprising] a plurality of switched capacitors in parallel with each other ...". The Office Action further suggests that Anderson remedies the admitted deficiency through its purported teaching of switched capacitor network 12 of FIG. 2. Thus, the Office Action suggests a correspondence between Seidel's parallel wave paths 10 and 11 and Applicant's "feed forward circuit" and further suggests that Anderson's switched capacitor network 12 may be used as a substitute, or modification, of Seidel's parallel wave paths 10 and 11. As discussed above, however, such a correspondence does not remedy the apparent series connection that is required between Seidel's parallel

wave paths 10, 11 and Seidel's amplifier 28, which is in contradistinction to Applicant's claim 1.

Concerning the second criteria which must be met to establish *prima facie* obviousness of a claimed invention, the combination of Seidel with Anderson must have a reasonable expectation of success. In other words, for example, the proposed modification cannot change the principle of operation of a reference. (See M.P.E.P. § 2143.02 VI.). The Office Action nevertheless proposes the modification, whereby Seidel's parallel wave paths 10,11 are replaced with Anderson's switched capacitor network 12. Seidel, however, seems to require that parallel wave paths 10,11 be implemented using active stages having essentially flat gain characteristics. (See column 3, lines 45-47 and column 3, lines 65-67.)

Anderson's switched capacitor network 12, on the other hand, does not appear to provide an active stage having a flat gain characteristic as is required by Seidel's parallel wave paths 10,11. Thus, even if Seidel did disclose a parallel connection between amplifier 28 and parallel wave paths 10,11, which apparently it does not, modifying Seidel's parallel wave paths 10,11 using switched capacitor network 12 of Anderson would seem to change the principle of operation of Seidel. "If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." M.P.E.P. § 2143.02 VI. Applicant respectfully submits, therefore, that claim 1 patentably distinguishes over the combination of Seidel and Anderson and is in condition for allowance.

Similarly with regard to Applicant's claim 10, a parallel connection is required between the feed-forward circuit and the amplifier, since the "feed-forward circuit [has] an input [that is] coupled to the output of the data processing module and an output [that is] coupled to the output of the amplifier" and the "amplifier [also has] an input coupled to the output of the data processing module." As discussed above, however, a series connection appears to be required between Seidel's parallel wave paths 10, 11 and Seidel's amplifier 28, which is in contradistinction to Applicant's claim 10. As such, the combination of Seidel and Anderson fails as to the third criteria which must be met to establish *prima facie* obviousness of a claimed invention. Furthermore,

even if Seidel did disclose a parallel combination of its amplifier 28 and parallel wave paths 10,11, which apparently it does not, modifying Seidel's parallel wave paths 10,11 using switched capacitor network 12 of Anderson would seem to change the principle of operation of Seidel. As such, the combination of Seidel and Anderson fails as to the second criteria which must be met to establish *prima facie* obviousness of a claimed invention. Applicant submits, therefore, that claim 10 patentably distinguishes over the combination of Seidel and Anderson and is in condition for allowance.

The Office Action fails to establish that claims 2-5, 7-9, 11-14, and 16-17 are unpatentable over Seidel in view of Anderson and further in view of U.S. Patent No. 3,886,470 to O'Neil et al. (hereinafter O'Neil) under 35 U.S.C. § 103(a).

The Office Action admits as to the deficiencies of the combination of Seidel and Anderson and suggests that the teachings of O'Neil remedy such deficiencies. However, the Office Action fails to show how O'Neil remedies other deficiencies of the combination of Seidel and Anderson, as discussed above. In particular, the combination of Seidel and Anderson seems to require a series connection between amplifier 28 and parallel wave paths 10,11, which is in contradistinction to Applicant's claim 1 and 10 and is in violation of the third criteria that must be met to establish *prima facie* obviousness of a claimed invention. Further, it seems that the combination of Anderson with Seidel changes the principle of operation of Seidel, which is in violation of the second criteria that must be met to establish *prima facie* obviousness of a claimed invention.

Since O'Neil fails to remedy the deficiencies of the combination of Seidel and Anderson with respect to Applicant's claims 1 and 10, it follows that O'Neil also fails to remedy the deficiencies of the combination of Seidel and Anderson with respect to the dependent claims of claims 1 and 10. In particular, the dependent claims 2-5, 7-9, 11-14, and 16-17 of independent claims 1 and 10, respectively, include all of the limitations of claim 1 and 10 and recite additional features which further distinguish these claims from the combination of Seidel, Anderson, and O'Neil. "If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious." (See M.P.E.P. § 2143.03). Applicant respectfully submits, therefore, that claims 2-5, 7-9, 11-14, and 16-17 are in condition for allowance.

The Office Action fails to establish: 1) that claims 19-22 are unpatentable over Adam in view of O'Neil; 2) that claim 23 is unpatentable over Adam in view of Anderson; and 2) that claims 24-25 are unpatentable over Adam in view of Anderson and further in view of O'Neil under 35 U.S.C. § 103(a).

Concerning the third criteria which must be met to establish *prima facie* obviousness of a claimed invention, the combination of Adam with O'Neil must be shown to teach or suggest all of Applicant's claimed limitations. Applicant's claim 18 at least sets forth "a printed circuit board," "a first device," and "an amplifier having an input and an output, wherein ... the amplifier is coupled to [an] input of the first device via the printed circuit board." The Office Action, however, fails to show that Adam teaches a printed circuit board as the medium to be used to interconnect amplifier 18 to device 14 as is required by Applicant's claim 18. The Office Action cites Adam's abstract for the source of the purported teaching, however, it seems that Adam's abstract is completely silent as to the teaching of the use of a printed circuit board generally, and more particularly, Adam's abstract seems to be silent as to a specific teaching of the use of a printed circuit board to provide the connection medium between amplifier 18 and device 14.

Furthermore, claim 18 sets forth at least that "a feed forward circuit [is connected] in parallel with said amplifier," while claim 19 at least sets forth that the "feed forward circuit comprises a capacitor." Claims 20-25 similarly set forth at least that the feed forward circuit includes a capacitor(s). Adam, however, seems to require that the feedforward circuit is comprised solely of an amplifier having a gain value of  $g_z$ , thus apparently precluding the use of a capacitor in the feedforward circuit. (See column 2, lines 51-53). Thus, the combination of Adam with the cited references does not satisfy the third criteria which must be met to establish *prima facie* obviousness of a claimed invention, since the combination of Adam with the cited references has not been shown to teach or suggest all of the limitations of Applicant's claims 19-25.

It would seem also, that the combination of Adam with the cited references does not satisfy the second criteria which must be met to establish *prima facie* obviousness of a claimed invention. In particular, by substituting the amplifier of Adam with the capacitor(s) of O'Neil and/or Anderson, as the Office Action suggests, the

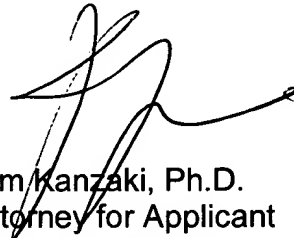
operation of Adam is modified. In particular, Adam seems to require that the gain value of the feed forward circuit be greater than 1, since Adam distinguishes between attenuation factor,  $g_d$ , and gain  $g_z$ . (See col. 3, lines 25-26). Replacing the amplifier of Adam with the capacitor(s) of O'Neil and/or Anderson, however, would seem to preclude a gain value of greater than 1, since capacitors are not active. "If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." M.P.E.P. § 2143.02 VI.

Furthermore, since rejected dependent claims 19-25 include all of the limitations of claim 18 and any intervening claims, and recite additional features which further distinguish these claims from Adam and the combined references as cited by the Office Action, then the Office Action also fails to show how these combined references remedy the deficiencies of Adam with respect to claims 19-25. "If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious." (See M.P.E.P. § 2143.03). Thus, the combination of Adam and any references that do not remedy the deficiencies of Adam with respect to Applicant's claim 18, necessarily do not remedy deficiencies as to the dependent claims of Applicant's claim 18. Applicant respectfully submits, therefore, that claims 19-25 patentably distinguish over the combination of Adam and O'Neil and are in condition for allowance.

CONCLUSION

Reconsideration and a notice of allowance are respectfully requested in view of the remarks presented above. If the Examiner has any questions or concerns, a telephone call to the undersigned is invited.

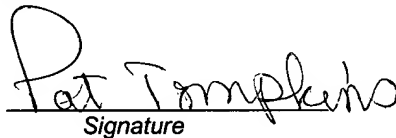
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Name

  
Signature